

REMARKS

The Examiner is thanked for the thorough examination and search of the subject patent application.

Claims 44, 48, 49 and 53-60 are pending; Claims 44, 48, and 49 have been currently amended; Claims 53-60 have been newly added; Claims 1-43, 45-47 and 50-52 have been canceled.

Response to Claim Objections

Applicants respectfully traverse the claim objection to Claim 45 as Claim 45 has been canceled.

Response to Claim Rejections under 35 U.S.C. 103

Applicants respectfully traverse the rejections for at least the reasons set forth below.

Response to Claims 44, 48, 49 and 53-59

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As currently amended, independent claim 44 is recited below:

44. A chip package comprising:
a semiconductor chip;

an identity of product and manufacturer or a bar code on a back surface of said semiconductor chip;

multiple metal bumps on a front surface of said semiconductor chip, wherein said front surface is an active device surface of said semiconductor chip; and

an optically transparent layer over said back surface, wherein said optically transparent layer covers said identity of product and manufacturer or said bar code, wherein said identity of product and manufacturer or said bar code is visible through said optically transparent layer.

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Reconsiderations of Claims 44 and 48 rejected under 35 U.S.C. 103(a) as being unpatentable over Flip Chip Ball Grid Array (FPBGA) Package Family, hereinafter Flip Chip, in view of Chung (US2004/0159462) are requested in accordance with the following remarks.

Applicants respectfully assert that the chip package claimed in Claim 44 patentably distinguishes over the citations by Flip Chip Ball Grid Array (FPBGA) Package Family and by Chung (US2004/0159462).

This invention discloses there is an optically transparent layer over a back surface of a semiconductor chip, covering an identity of product and manufacturer or a bar code on the back surface of the semiconductor chip. Thereby, the optically transparent layer may protect the identity of product and manufacturer or the bar code from being damaged and provide the capability to read the identity of product and manufacturer or the bar code.

One other major objective of this invention is to prevent the illegal remarking of the identity of manufacturer and product. In the semiconductor industry, illegal activities of faking brand names have been a serious problem. Counterfeiters buy cheap semiconductor products

from a not-well-known manufacturer on the open market, erase the original identity mark of the not-well-known manufacturer, and then put on a fake identity mark of a well-known manufacturer. With the presence of the optically transparent layer in this invention, it becomes relatively more difficult for counterfeiters to remark the identity of product and manufacturer. To perform the illegal remarking the product of this invention involves (1) removing the encapsulated optically transparent layer, (2) removing the original identity of not-well-known product and manufacturer, and (3) remarking illegally with a fake identity of product and manufacturer. The step of removing the encapsulated optically transparent layer is technically difficult, and the objective to prevent illegally remarking can therefore be achieved. The citations by Flip Chip Ball Grid Array (FPBGA) Package Family and by Chung fail to teach, hint or suggest the motivation and the claimed chip package, covering the identity of product and manufacturer with an optically transparent layer on the back surface of a semiconductor chip.

It is well known that semiconductor devices or circuits (except for the sensing or emissive devices) should be operated in the dark, and the semiconductor devices or circuits may malfunction when exposed to light. That is why an opaque layer is usually used to encapsulate the front surface (the surface with active devices) of a semiconductor chip in the conventional package (for example, wirebonding package). In this invention, the optically transparent layer over the back surface of the semiconductor chip may have a light pass therethrough and illuminate the back surface of the semiconductor chip, and therefore the identity of the product and manufacturer or bar code marked on the back surface is visible or can be read. As an example, if the semiconductor chip is flip-chip assembled on a substrate, the light is blocked by a substrate or possibly also by an underfill. No light will illuminate the active devices or circuits

on the front surface of the semiconductor chip in the flip chip package, and the semiconductor chip will function normally.

The Examiner considers that “At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the teachings of Flip Chip with those of Chung”. ~ *See the last paragraph of page 3, in the last Office Action mailed Jun. 5, 2007* ~

Applicant respectfully traverses the Examiner’s opinion. The citations by Flip Chip Ball Grid Array (FPBGA) Package Family and by Chung fail to teach, hint or suggest there may be an identity of product and manufacturer or a bar code on a back surface of the semiconductor chip and covered by an optically transparent layer for a flip chip technology, as now claimed in amended Claim 44. Based on the previous paragraphs, even in the citations by Flip Chip Ball Grid Array (FPBGA) Package Family in view of Chung, the motivations of protecting the identity of product and manufacturer or the bar code from being damaged, preventing the identity of product and manufacturer or the bar code from being illegally remarked and still providing capability to read the identity of product and manufacturer or bar code can not be attained.

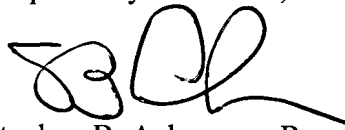
Withdrawal of rejection under 35 U.S.C. 103(a) to Claims 44 and 48 is respectfully requested.

Conclusion

All of the pending claims are believed to be in condition for allowance. Accordingly, allowance of the claims and the application as a whole are respectfully requested.

It is requested that should Examiner Walsh not find that the Claims are now Allowable that he call the undersigned at 845 452-5863 to overcome any problems preventing allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'SBA', with a long horizontal flourish extending to the right.

Stephen B. Ackerman, Reg. No. 37,761